CHB JE
(Public Health)

Previous Year Paper
28 Jan 2023 Shift 2

CHANDIGARH HOUSING BOARD
POST: JE (PUBLIC HEALTH)
Question Booklet & Answer Key
28.01.2023 (EVENING)

1. Choose the correct synonym for the given underlined word from the options that follow:-
Germane
A) Light B) Bright C) Quick D) Relevant

2. Choose the correct antonym for the given underlined word from the options that follow:-
Tenuous
A) Brittle B) Modest C) Betrayer D) Strong

3. Identify the error in the underlined parts of the sentence and mark the correct answer from the options that follow:-
Gopal did not get (A) promotion because (B) he was (C) junior than other employees. (D)

4. Choose the correct preposition to be filled in the blank from the options that follow:-
Satish deals _____ cotton and cloth.
A) of B) in C) about D) over

5. Choose the correct meaning of the given underlined idiom from the options that follow:-
A bull in a China shop.
A) A person who is rough & clumsy where skill and care are required
B) An ugly person
C) A virtuous person
D) A person who is always critical of others

6. For its recent term in UN Security Council, India had secured a record:
A) 172 of the 193 votes B) 172 of the 194 votes
C) 184 of the 192 votes D) 184 of the 194 votes

7. When was the New Space India Limited (NSIL) established?
A) 2018 B) 2019 C) 2020 D) 2021

8. On which river is the master piece Bogibeel Bridge situated?
A) Brahmaputra River B) The Ganges C) Narmada D) Kaveri

9. As per Forest Survey of India's definition, about what percent of tree canopy as a forest make it a 'Green'?
A) 22 B) 18 C) 15 D) 10

10. Which one of the given National Coordinators looks after the content for 'Engineering' courses on SWAYAM?
A) NIOS B) NITTTR C) NPTEL D) UGC

11. 36 vehicles are parked in a parking lot in a single row. After the 1st scooter there is one car, after 2nd scooter there are two cars, after 3rd scooter there are three cars and so on. Find out the number of car in the second half of the row.
A) 17 B) 15 C) 12 D) 10

12. The next two terms in the given alphabetic series: bbCCC, cccEE, eeHHH, hhhLL, are :
A) IIPPP and qqqVV B) IIIQQ and qqWWW
C) IIQQQ and qqqWW D) IIIPP and qqVVV

13. If 'A × B' means that A is sister of B, 'A ÷ B' means that A is daughter of B, 'A− B' means that A is son of B. Then how is P related to S in the relationship:
'P− Q × R ÷ S'?
A) Brother B) Son C) Grandson D) Daughter's son

14. A cube is coloured red on two opposite faces, blue on two adjacent faces and yellow on two remaining faces. It is then cut into two halves along the plane parallel to the red faces. One piece is then cut into four equal cubes and the other one into 32 equal cubes.
How many cubes have at least one face painted blue?
A) 4 B) 14 C) 17 D) 20

15. Six persons Anu, Arun, Aman, Arjun, Ashu and Akriti are working in an office. Each of them plays a different game viz. P, Q, R, S, T and U but not necessarily in the same order. Each of them got a different salary – 1000, 2000, 2500, 3000, 3500 and 4000, but not necessarily in the same order. Arjun gets a salary of 2500 and he plays game U. The one who play Q gets a salary of 3000. Aman plays game P and gets salary of 3500. The one who gets a salary of l000 does not play game R or S. Akriti does not play Q or S but gets a salary of 2000. Ashu gets a salary of 4000 and does not play game R. Arun does not get a salary of 1000. Who gets a salary of 3000?
A) Arun B) Anu C) Akriti D) Aman

16. Twelve years ago, the age of the father was three times the age of his son. After twelve years, father's age will be twice than of his son. The ratio of their present ages is
A) 4 : 7 B) 2 : 7 C) 4 : 3 D) 7 : 3

17. Mr. Arun is on tour and he has ₹360 for his expenses. If he exceeds his tour by 4 days, he must cut down his daily expenses by ₹3. For how many days is Mr. Arun out on tour?
A) 15 B) 20 C) 40 D) 60

18. 12 engines consume 30 metric tonnes of coal when each is running 18 hrs. a day. How much coal will be required of 16 engines, each running 24 hrs. a day, it being given that 6 engines of former type consume as much as 8 engines of latter type?
A) 20 tonnes B) 30 tonnes C) 40 tonnes D) 60 tonnes

19. The length of rectangle is twice its breadth. If the length is decreased by half of the 10cm. and the breadth is increased by half of the 10cm., the area of the rectangle is increased by 5sq.cm more than 70sq.cm. Find the length of the rectangle.
A) 45cm. B) 40cm. C) 30cm. D) 21cm.

20. A pipe P can fill a tank in 12 minutes and another pipe R can fill it in 15 minutes. But, the 3rd pipe M can empty it in 6 minutes. The 1st two pipes P and R are kept open for double the 2.5 minutes in the beginning and then the 3rd pipe is also opened. In what time is the tank emptied?
A) 25 minutes B) 30 minutes C) 35 minutes D) 45 minutes

21. In computer networking, WWW means:
A) World Wide Web and is a system of interlinked hypertext documents accessed via the Internet.
B) World Wide Web and is a set of protocols used to access documents via internet.
C) World Wide Web and is a network of various types of computers that are physically connected to each other.
D) Wide World Web and is just another name for the Internet.

22. Which of the following is NOT TRUE?
A) RAM means Read Accumulator Memory.
B) MICR means for Magnetic Ink Character Recognition System.
C) ROM means Read Only Memory.
D) ASCII means American Standard Code for Information Interchange.

23. Why did virtualization boost the emergence of Cloud computing?
A) Virtualization made it easier and cheaper to share resources between users.
B) A virtual machine is more secure than a physical machine.
C) Virtual machines have greater performance than their physical counterparts.
D) Virtualization leads to better network utilization.

24. _____refers to the technology in which some space in hard disk is used as an extension of main memory.
A) Cache memory B) Paging C) Virtual memory D) Associative memory

25. Which of the following statements is correct?
A) An Excel spreadsheet may contain only one pivot table.
B) An Excel workbook may contain only one pivot table.
C) An Excel spreadsheet may contain multiple workbooks.
D) An Excel workbook may contain multiple spreadsheets.

26. Number of links in a 30m metric chain is
A) 100 B) 150 C) 180 D) 200

27. The magnetic bearing of a line AB was N 59°30′W in the year 1967, when the declination was 4°10′ E. If the present declination is 3°W, the whole circle bearing of the line is
A) 299°20′ B) 307°40′ C) 293°20′ D) 301°40′

28. A canal which is aligned at the right angle to the contour is called
A) Contour canal B) Watershed canal C) Branch canal D) Side slope canal

29. The terrain may be classified as a rolling terrain if the cross slope of the land is
A) Upto 10% B) Between 10% and 25% C) Between 25% and 60% D) More than 60%

30. The value of ruling gradient in plains as per IRC recommendations is
A) 1 in 12 B) 1 in 15 C) 1 in 20 D) 1 in 30

31. Fish plate is in contact with rail at
A) web of rail B) fishing plane C) head of rail D) foot of rail

32. In a shunting signal if the red band is inclined at 45°, it indicates:
A) Stop B) Proceed C) Proceed cautiously D) Stop cautiously

33. The ratio of 5-day BOD to ultimate BOD is about
A) 1/3 B) 2/3 C) 3/4 D) 1.0

34. A municipal corporation is required to treat 1000 m^3/day of water. It is found that an overflow rate of 20 m/day will produce a satisfactory removal of the discrete suspended particles at a depth of 3 m. The diameter (in meters, rounded to the nearest integer) of a circular settling tank designed for the removal of these particles would be
A) 2 m B) 4 m C) 8 m D) 12 m

35. In disinfection, which of the following forms of chlorine is most effective in killing the pathogenic bacteria?
A) Cl B) OC1 C) NH_2C1 D) HOCl

36. Void ratio of soil mass can
A) Never be greater than unity B) Be zero
C) Take any value greater than zero D) Take value between 0 and 1

37. Coarse grained soils are best compacted by
A) Drum roller B) Rubber tyred roller C) Sheep's foot roller D) Vibratory roller

38. If the plasticity index of soil mass is zero, the soil is
A) Sand B) Silt C) Clay D) Clayey silt

39. Pick the incorrect statement from the following four statements.
A) On the plane which carries maximum normal stress, the shear stress is zero.
B) Principal planes are mutually orthogonal.
C) On the plane which carries maximum shear stress, the normal stress is zero.
D) The principal stress axes and principal strain axes coincide for an isotropic material.

40. Which of the following tree yields hard wood?
A) Deodar B) Chir C) Shishum D) Pine

41. The most common cement retarder is
A) Gypsum B) Calcium chloride C) Calcium carbonate D) Sodium chloride

42. The compaction factor test of cement concrete determines its
A) Strength B) Porosity C) Degree of compaction D) workability

43. Surkhi is added to lime mortar to
A) Prevent shrinkage B) Decrease setting time C) Increase bulk D) Impart hydraulicity

44. Rate of change of bending moment is equal to
A) Shear force B) Deflection C) Slope D) Rate of loading

45. The number of independent equations to be satisfied for static equilibrium of plane structure is
A) 1 B) 2 C) 3 D) 4

46. The deformation of a spring produced by a unit load is called
A) Stiffness B) Flexibility C) Influence coefficient D) Unit strain

47. A hollow circular shaft has an outer diameter of 100 mm and a wall thickness of 25 mm. The allowable shear stress in the shaft is 125 MPa. The maximum torque the shaft can transmit is
A) 46 kNm B) 24.5 kNm C) 23 kNm D) 11.5 kNm

48. The number of seismic zones in which India has been divided is
A) 6 B) 5 C) 4 D) 3

49. In case of hand mixing of concrete, the extra cement to be added is
A) 5% B) 10% C) 15% D) 20%

50. The transplantation of rice requires 10 days and total depth of water required during transplantation is 48 cm. During transplantation, there is an effective rainfall (useful for irrigation) of 8 cm. The duty of irrigation water (in hectare/cumec) is _____.
A) 216 B) 612 C) 300 D) 108

51. The population of a small town in three consecutive years are 5000, 7000 and 8400 respectively. The population of this town in fourth consecutive year as per geometrical increase method is
A) 9500 B) 9800 C) 10100 D) 10920

52. Alum as a coagulant is found to be most effective for pH range of water
A) 2 – 4 B) 4 – 6 C) 6 – 8 D) 8 – 10

53. A soil is composed of solid spherical grains of identical specific gravity and diameter between 0.075 mm and 0.0075 mm. If the terminal velocity of the largest particle falling through water without flocculation is 0.5 mm/s, that for the smallest particle would be
A) 0.005 mm/s B) 0.05 mm/s C) 5 mm/s D) 50 mm/s

54. The length of rectangular sedimentation tank should not be more than (b is width of the tank)
A) b B) $2b$ C) $4b$ D) $8b$

55. On standard silica scale, the turbidity in drinking water should be limited to
A) 10 ppm B) 20 ppm C) 30 ppm D) 50 ppm

56. Period of cleaning of slow sand filters is
A) 24 – 48 hours B) 10 – 12 days C) 2 – 3 months D) 1 – 2 years

57. Activated carbon is used for
A) Disinfection B) Removing hardness C) Removing odours D) Removing corrosiveness

58. A sewer that receives the discharge of a number of house sewers is called
A) House sewer B) Lateral sewer C) Main sewer D) Submain sewer

59. The type of sewer which is suitable for both combined and separate system is
A) Circular sewer B) Egg shaped sewer C) Horse shoe type sewer D) Semi-elliptical sewer

60. If the sewage contains grease and fatty oils, these are removed in
A) Grit chambers B) Detritus tanks C) Skimming tanks D) Sedimentation tanks

61. The maximum efficiency of BOD removal is achieved by
A) Oxidation Pond B) Oxidation Ditch C) Aerated lagoons D) Trickling filters

62. Most of the bacteria in sewage are
A) parasitic B) saprophytic C) pathogenic D) anaerobic

63. The rain is generally termed as acidic, if pH value of rain water falls below
A) 3 B) 5 C) 7 D) 8

64. Alkalinity present in the water in mg/l as CaCO3 is
A) 250 B) 500 C) 1750 D) 5000

65. A water treatment plant capacity, 1 m^3/s has filter boxes of dimensions 6 m × 10 m. Loading rate to the filters is 120 $m^3/day/m^2$. When two of the filters are out of service for back washing, the loading rate (in $m^3/day/m^2$) is _____.
A) 288 B) 144 C) 200 D) 352

66. Consider the following unit processes commonly used in water treatment; Rapid Mixing (RM), Flocculation (F), Primary Sedimentation (PS), Secondary Sedimentation (SS), Chlorination (C) and Rapid Sand Filtration (RSF). The order of these unit processes (first to last) in a conventional water treatment plant is:
A) PS → RSF→ F → RM → SS → C B) PS → F → RM → RSF → SS → C
C) PS → F → SS → RSF → RM → C D) PS → RM → F → SS → RSF → C

67. The absorbent most commonly used in water and waste treatment is
A) Sand of grain size from 0.1 to 2 mm. B) Activated carbon granules of size 0.1 to 2 mm
C) Ordinary wood shavings of the fine size D) Coal-tar

68. A combined sewer is the one which transports
A) domestic sewage and storm water B) domestic sewage and industrial wastes
C) domestic sewage & over-head flow D) domestic sewage, industrial wastes & storm water

69. Determine the correctness or otherwise of the following Assertion [A] and the Reason [R].
Assertion (A): The crown of the outgoing larger diameter sewer is always matched with the crown of incoming smaller diameter sewer.
Reason (R): It eliminates backing up of sewage in the incoming smaller diameter sewer.
A) Both (A) and (R) are true and (R) is the correct reason for (A)
B) Both (A) and (R) are true but (R) is not the correct reason for (A)
C) Both (A) and (R) are false
D) (A) is true but (R) is false

70. A circular sewer 2 m diameter has to carry a discharge of 2 m^3/s when flowing nearly full. What is the minimum required slope to initiate the flow? Assume Manning's $n = 0.015$.
A) 0.00023 B) 0.000036 C) 0.000091 D) 0.000014

71. An inverted siphon is a
A) device for distributing septic tank effluent to a soil absorption system
B) device for preventing overflow from elevated water storage tank
C) section of sewer which is dropped below the hydraulic grade line in order to avoid an obstacle.
D) device for preventing crown corrosion of sewer

72. A waste water sample diluted to 100 times with aeration water had an initial dissolved oxygen (DO) of 7.0 mg/l and after 5 days of incubation at 20°C, the DO was zero. The BOD of waste water is
A) 700 mg/l B) 100 mg/l C) 7 mg/l D) Cannot be determined

73. High COD to BOD ratio of an organic pollutant represents
A) high biodegradability of the pollutant
B) low biodegradability of the pollutant
C) presence of free oxygen for aerobic decomposition
D) presence of toxic material in the pollutant

74. Presence of excess nitrates in river water indicates
A) recent pollution of water with sewage
B) past pollution of water with sewage
C) immediate pollution of water with sewage
D) no pollution of water with sewage

75. Particulate matter (fly ash) carried in effluent gases from the furnaces burning fossil fuels are better removed by
A) Cotton bag house filter
B) Electrostatic Precipitator (ESP)
C) Cyclone
D) Wet scrubber

76. All of the following diseases can be directly linked to air pollution except
A) Lung cancers
B) Cardiovascular diseases
C) Respiratory illnesses
D) Diarrhoeal diseases

77. Second hand exposure to smoking can cause:
A) Low birthweight in infants
B) Respiratory diseases in children
C) Ischaemic heart disease in adults
D) All of these

78. Early detection and treatment of disease is a method of
A) Secondary prevention
B) Primary prevention
C) Primordial prevention
D) Tertiary prevention

79. The most cost-effective way to bring down the burden of heart disease in a community would be:
A) Screening of population for risk factors, stratifying them, and managing according to risk profile
B) Rehabilitation of patients with heart disease
C) Treating the patients of heart disease
D) None of these

80. The corner stone for delivery of healthcare services in India are:
A) Tertiary care hospitals
B) Primary health centres
C) Civil Hospitals
D) Secondary care centres

81. Food fortification as an intervention for nutritional supplementation used for the following micronutrients except
A) Iron B) Iodine C) Calcium D) Vitamin A and D

82. The morbidity status of a disease in the community is assessed through:
A) Incidence and prevalence rates
B) Age specific death rate
C) Disease specific death rate
D) All of the above

83. In the epidemiological triad model for Covid 19 infection, contaminated droplets/surface represents
A) Environment B) Agent C) Host D) None of the above

84. Which of the following micro-organism cannot multiply on their own
A) bacteria B) virus C) fungi D) protozoa

85. **Directorate of National Vector Borne Disease Control Programme (NVBDCP)** is the central nodal agency for prevention and control of all the following vector borne diseases except
A) Malaria, Dengue, and chikungunya
B) Japanese encephalitis
C) Kalazar
D) Leishmaniasis

86. The **National Family Health Survey (NFHS)** is a large-scale, multi-round survey conducted in
A) All households of India
B) Representative households throughout India
C) All households of representative states of India
D) None of the above

87. Hepatitis A is a communicable disease that is spread through:
A) Contaminated food and water
B) Direct contact with an infectious person
C) Oral sex
D) All of the above

88. Screening for a disease in a population is a useful technique to:
A) Detect the presence of disease before the symptoms appear
B) Detect the seriousness of disease
C) Assess the progress of disease
D) None of these

89. Sensitivity refers to a test's ability to designate:
A) An individual with disease as positive
B) An individual without disease as negative
C) Both of the above
D) None of the above

90. In the national immunisation schedule of India, which of the following vaccine is only given in endemic states
A) Pneumococcal conjugate vaccine
B) Japanese encephalitis
C) Rotavirus
D) Hepatitis B

91. The Mental Healthcare Act 2017 came into force on:
A) 7th July, 2018 B) 7th July, 2017 C) 27th July, 2018 D) 27th July, 2017

92. All of the following diseases can be caused by contaminated water except:
A) Cholera B) Polio C) Hepatitis A D) Hepatitis B

93. RCH program in India targets
A) Women in reproductive age group, maternal, new-born, children and adolescents
B) Pregnant women and new-borns
C) Pregnant women, new-borns and children
D) None of the above

94. The most widespread micronutrient condition in India is:
A) Vitamin A deficiency
B) Iron deficiency anaemia
C) Iodine deficiency
D) Vitamin D deficiency

95. The most common issue that the elderly in our country are facing is
A) Physical Abuse B) Loneliness C) Lack of finances D) Technological barriers

96. Lifestyle risk factors of cardiovascular disease include all of the following except
A) Dietary habits B) Level of Stress C) Sleep Habits D) Advancing age

97. Tobacco consumption is linked to all of the following except:
A) Cancer of urinary bladder B) Lung cancer
C) Cancer of mouth and larynx D) Brain cancer

98. The ABHA number in Ayushman Bharat Digital Mission helps to:
A) Receive your digital lab reports, prescriptions and diagnosis seamlessly
B) Accessing and sharing your health records digitally
C) Interaction with participating healthcare providers
D) All of the above

99. Which of the following is not true in relation to ASHA workers:
A) ASHA can be a male or a female resident of the village
B) ASHA must primarily be a woman resident of the village
C) ASHA should be a literate woman
D) ASHA will be a health activist in the community

100. At present, India is at what stage of demographic cycle
A) High stationary B) Early expanding C) Late expanding D) Low stationary

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Chandigarh Housing Board
Post: JE Public Health
Answer Key (A-Series) : 28.01.2023 (Evening)

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	D	26	B	51	D	76	D
2	D	27	B	52	C	77	D
3	D	28	D	53	A	78	A
4	B	29	B	54	C	79	A
5	A	30	D	55	A	80	B
6	C	31	B	56	C	81	C
7	B	32	B	57	C	82	A
8	A	33	B	58	B	83	A
9	D	34	C	59	B	84	B
10	C	35	D	60	C	85	D
11	B	36	C	61	B	86	B
12	C	37	D	62	B	87	D
13	D	38	A	63	B	88	A
14	C	39	C	64	C	89	A
15	A	40	C	65	B	90	B
16	D	41	A	66	D	91	A
17	B	42	D	67	B	92	D
18	C	43	D	68	D	93	A
19	B	44	A	69	A	94	B
20	D	45	C	70	A	95	B
21	A	46	B	71	C	96	D
22	A	47	C	72	A	97	D
23	A	48	C	73	B	98	D
24	C	49	B	74	B	99	A
25	D	50	A	75	B	100	C